Uncertainty
User Manual

MARCH 2023

2 HP
42 MM DEEP
92 MA +12 V, 0 MA -12V, 0 MA +5V

Uncertainty is a tiny gate-processor, VU meter, and open-source platform for Eurorack.

Out of the box, Uncertainty is a stochastic gate-processor that randomly drops gates you try to pass through it. You can use Uncertainty to create branches in your patch where events are channeled into one river or another.

Plug Uncertainty into your computer you can replace this default firmware with others that completely change the functionality of the module. OAM will be continuously releasing new, free, open-source firmware for Uncertainty, but we also have a community writing and sharing their own code. It's got a fast processor and can be coded in C++, Python, and Go, so it's easy to jump in.

As of March 2023, Uncertainty has its second official firmware, VU Meter. Just a perfectly normal VU Meter where each LED gets its own gate output. Wait, what? No one's ever done that? But it makes gated effects and modulation so easy. Seriously, try it. It's too cool. Also, you can use jumpers on the module to invert the VU Meter or switch it into dot-mode, where only the peak LED is activated. So the loudness contour of a patch can strum things!

Uncertainty uses 53ma on the +12V rail plus 9-10ma per gate that is being sent out at any given moment.

The code for Uncertainty is completely open-source and public domain. Here you can find alternative firmware ands instructions on writing your own: https://github.com/oamodular/uncertainty

Changing the Firmware

When you change the firmware, you completely change what Uncertainty does. And it's really simple. You can download the official firmware on the Olivia Artz Modular site.
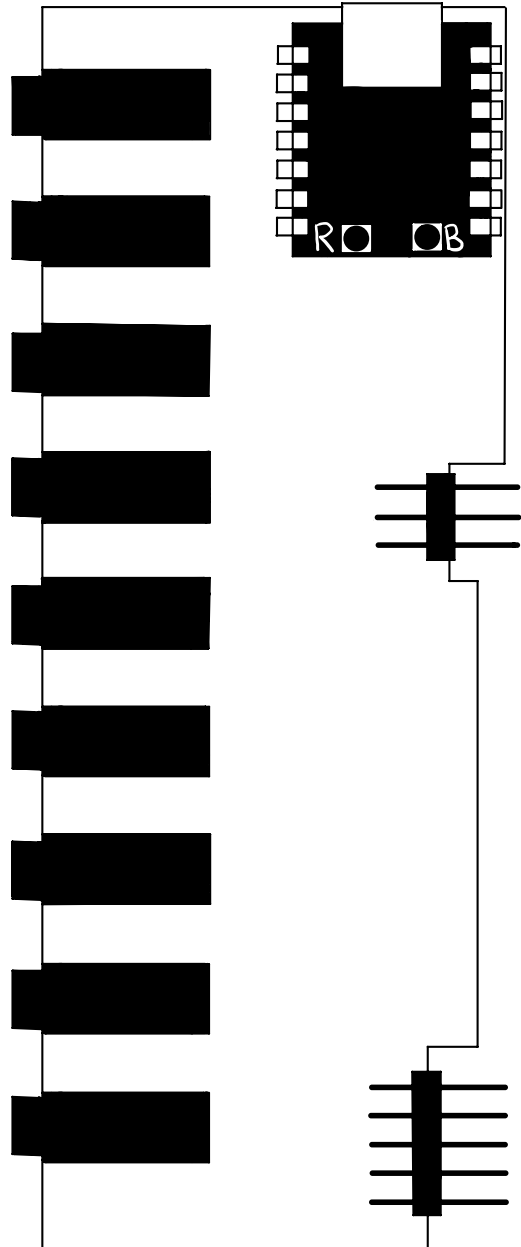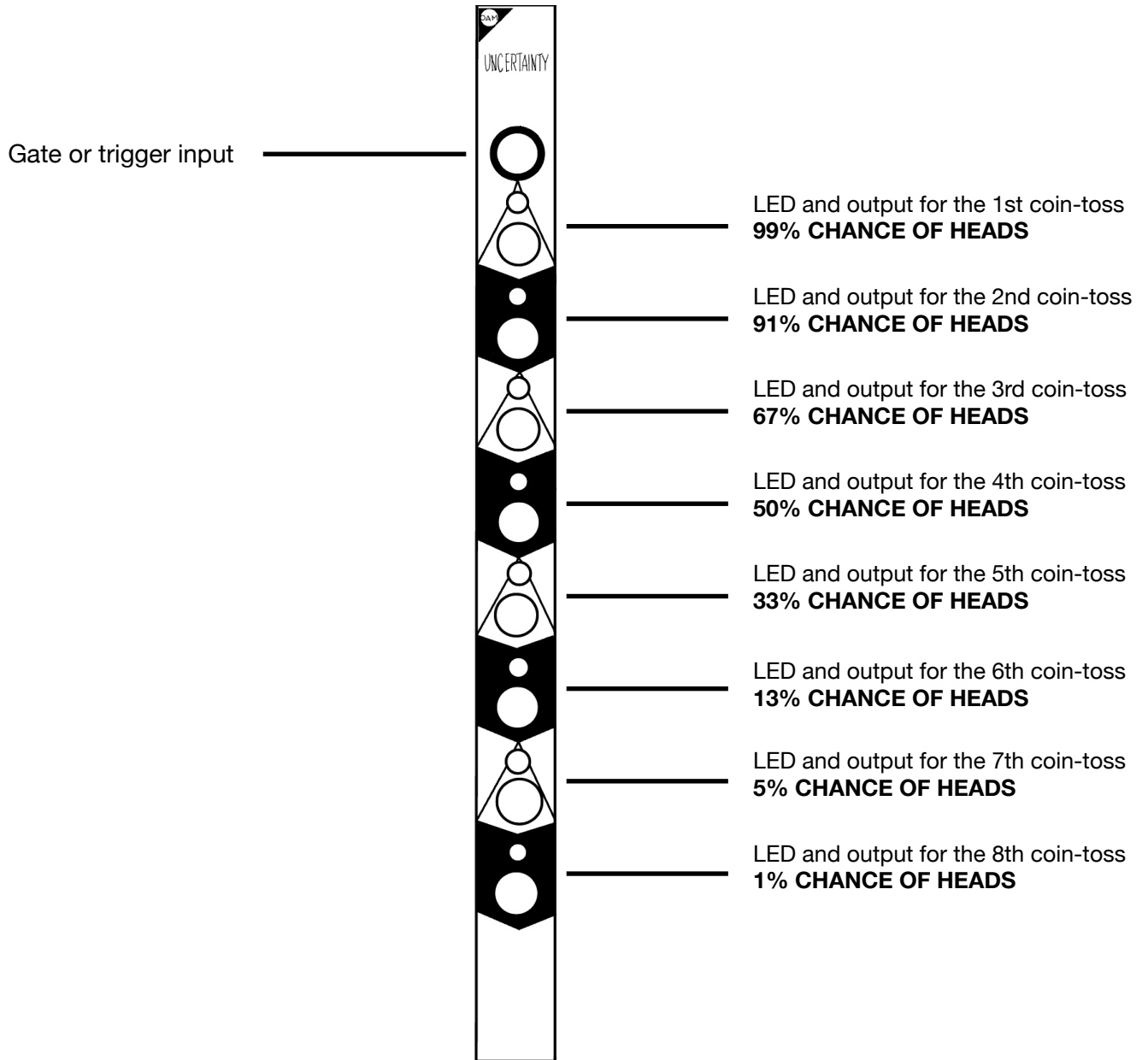
Step 1, hold down the B button while connecting Uncertainty to your computer with USB-C. A mysterious drive titled RPI-RP2 will suddenly appear on you computer.

Step 2, drag the .uf2 file for the firmware you want onto the RPI-RP2 drive. The drive should vanish as quickly as it appeared. You're done. That's it.

Eight Coins Mode

When anything above +1V goes into Uncertainty, it does eight weighted coin-tosses. If a coin toss comes up heads, you'll get a +5V signal that will stay high as long as the input signal stays high.

Gate or trigger input

LED and output for the 1st coin-toss
99% CHANCE OF HEADS

LED and output for the 2nd coin-toss
91% CHANCE OF HEADS

LED and output for the 3rd coin-toss
67% CHANCE OF HEADS

LED and output for the 4th coin-toss
50% CHANCE OF HEADS

LED and output for the 5th coin-toss
33% CHANCE OF HEADS

LED and output for the 6th coin-toss
13% CHANCE OF HEADS

LED and output for the 7th coin-toss
5% CHANCE OF HEADS

LED and output for the 8th coin-toss
1% CHANCE OF HEADS

Branching Mode

When anything below -1V goes into Uncertainty, it does four weighted coin-tosses. If a coin toss comes up heads, you'll get a +5V signa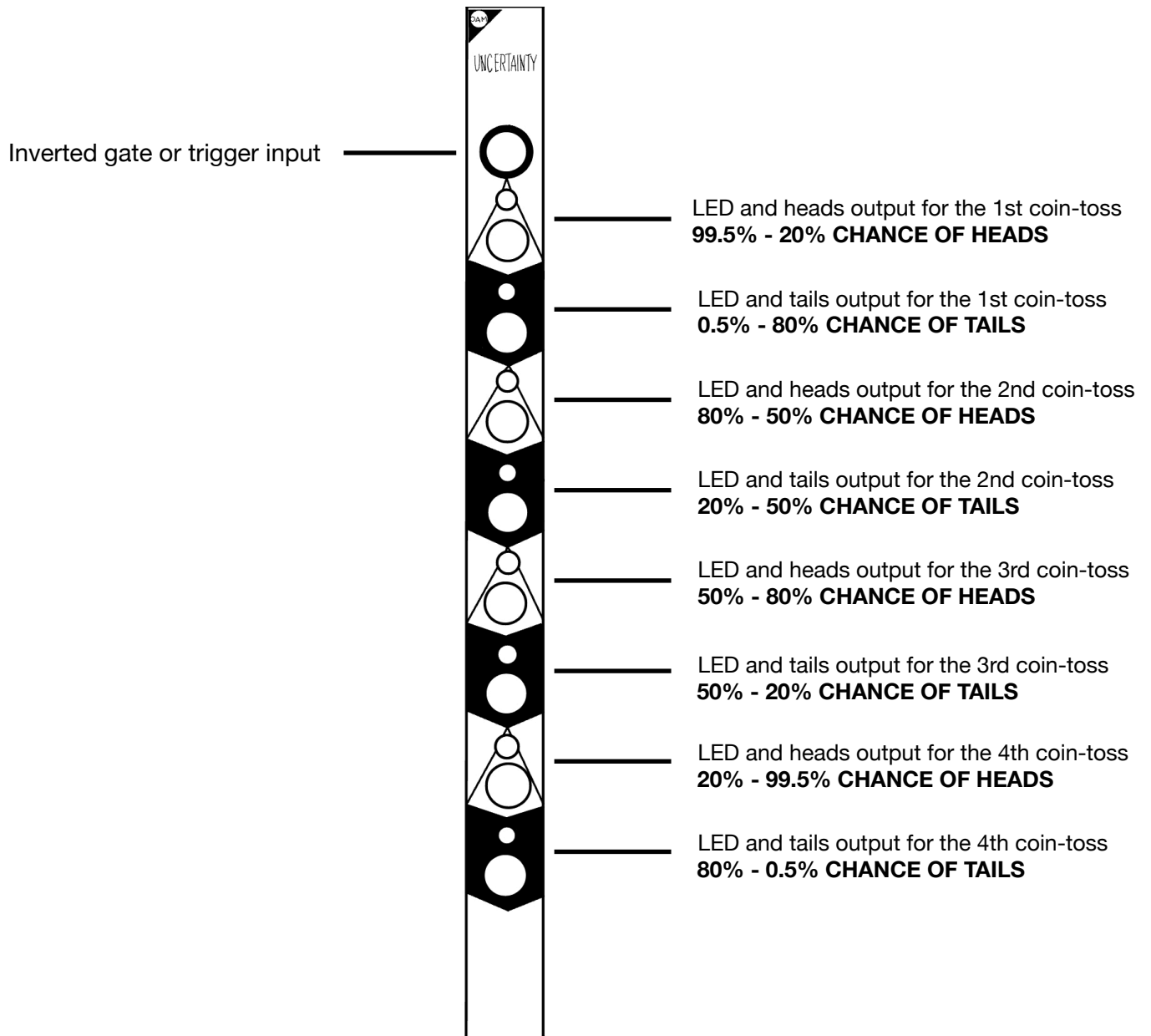l that will stay high as long as the input signal stays high (same as the other mode). But if it comes up tails, you'll get an +5V signal out of a different outlet. Half as many coin-tosses, but you get tails. Perfect for making branching pathways in your patches.

Try running your gates into an attenuverter so you can invert your gates before Uncertainty. This way you can adjust the voltage of your gates from -5V to -1V. Doing so will adjust the odds of the coin flips.

Inverted gate or trigger input

LED and heads output for the 1st coin-toss
99.5% - 20% CHANCE OF HEADS

LED and tails output for the 1st coin-toss
0.5% - 80% CHANCE OF TAILS

LED and heads output for the 2nd coin-toss
80% - 50% CHANCE OF HEADS

LED and tails output for the 2nd coin-toss
20% - 50% CHANCE OF TAILS

LED and heads output for the 3rd coin-toss
50% - 80% CHANCE OF HEADS

LED and tails output for the 3rd coin-toss
50% - 20% CHANCE OF TAILS

LED and heads output for the 4th coin-toss
20% - 99.5% CHANCE OF HEADS

LED and tails output for the 4th coin-toss
80% - 0.5% CHANCE OF TAILS

VU METER FIRMWARE FOR UNCERTAINTY

We all know how a VU meter works. The louder the sound, the taller the little bar of lights. A helpful tool. Yes, we know that. But this VU meter gives you a +5V gate output associated with each of the 8 level indicators.

There are also two options you can set for by putting jumpers over the pins on the back of Uncertainty. If you didn't get jumpers with your Uncertainty, reach out to us and we'll send you some.

If you put them over these two pins, the meter will be in dot-mode, where only the peak LED is activated.

If you put them over these two pins, the meter will be upside-down.